

Soothan Kim — Curriculum Vitae

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Education

Georgia Institute of Technology <i>Doctor of Science in Mechanical Engineering (GPA: 4.0/4.0)</i> Focus: Biological Fluid Mechanics, Advisor: Prof. David Hu	United States 2021–Present
Georgia Institute of Technology <i>Master of Science in Computational Science and Engineering (GPA: 4.0/4.0)</i>	United States 2024–Present
Seoul National University <i>Bachelor of Science in Mechanical Engineering (GPA: 3.9/4.3, Summa Cum Laude)</i> Advisor: Prof. Ho-Young Kim	Republic of Korea 2015–2021
Korea Science Academy of KAIST <i>Science Specialized High School</i>	Republic of Korea 2012–2015

Working Experiences

Multiphase Applied CFD Engineer Internship <i>Validations of LBM-based Phase-field Multiphase Solver</i>	Dassault Systèmes 2023
Undergraduate Winter Internship <i>Design of Wall-mounted Air Purifier Combined with Mask Sterilizer</i>	Samsung Electronics 2021
Undergraduate Summer Internship <i>Research on Turbo Blowers for Water Treatment Plant</i>	Samsung Engineering 2020

Teaching Experiences

Graduate Teaching Assistant <i>T.A. of Fluid Mechanics (Prof. David Hu)</i>	Georgia Institute of Technology 2022 Fall
Undergraduate Teaching Assistant <i>T.A. of Dynamics (Prof. Jae-Heung Park)</i>	Seoul National University 2020 Fall

Leadership Experiences

President & Webmaster <i>Managing the official website and hosting network events</i>	GT Korean Student Association 2021–Present
Translator & Squad Leader <i>Translated classified military intelligence, developed an RPA to translate Korean into English, led a squad comprised of 19 underclass soldiers</i>	Republic of Korea Army 2018–2019
Junior Mentor <i>Mentoring university students in the KorMent Program</i>	Korean Student Aid Foundation 2017
Mentor & Mentee <i>Mentoring fellow students in the Campus Mentoring Program</i>	Seoul National University 2015

Conference Proceedings

Physics of Pressure-Driven Eversion by Bloodworm <i>APS Physics March Meeting</i>	Anaheim, California 2025 March
Eversion Mechanics of Bloodworms <i>The Society for Integrative and Comparative Biology (SICB) Annual Meeting</i>	Atlanta, Georgia 2025 January
Flotation of California Blackworms and Other Hyponeuston <i>APS Physics Division of Fluid Dynamics (DFD)</i>	Salt Lake City, Utah 2024 November
Capillary flow simulation with the phase-field-based lattice Boltzmann solver <i>Discrete Simulation of Fluid Dynamics (DSFD) Conference</i>	Zurich, Switzerland 2024 July
Proboscis Eversion of Bloodworm <i>Glycera dibranchiata</i> <i>International Physics of Living Systems (PoLS) Annual Meeting</i>	Trieste, Italy 2024 July
Advancing Quantitative Understanding of Mosquito Behavior Near Traps <i>KSEA US-Korea Conference on Science, Technology, and Entrepreneurship (UKC)</i>	Dallas, Texas 2023 August
Advancing Quantitative Understanding of Mosquito Behavior Near Traps <i>NSF International Physics of Living Systems Annual Meeting (iPoLS)</i>	Atlanta, Georgia 2023 August
Optimization of Wetted Wall Cyclone for Pathogen Collection <i>American Association for Aerosol Research (AAAR)</i>	Raleigh, North Carolina 2022 October
Optimization of Wetted Wall Cyclone for Pathogen Collection <i>Fluids in Disease Transmission and Contamination</i>	South Hadley, Massachusetts 2022 August
Kimchi Fermentation in Korean Permeable Earthenware Onggi <i>APS Physics Division of Fluid Dynamics (DFD)</i>	Phoenix, Arizona 2021 November
Kimchi Fermentation in Korean Permeable Earthenware Onggi <i>Southeastern Regional Society of Integrative and Comparative Biology (rSICB)</i>	Atlanta, Georgia 2021 November

Journal Publications

Physics of Pressure-Driven Eversion by Bloodworm <i>Integrative and Comparative Biology, 2025 (in prep.)</i>
Capillary Flow Simulation with the Phase-field-based Lattice Boltzmann Solver <i>Physics of Fluids, 2025</i>
Flotation of California Blackworms and Other Hyponeuston <i>Interface Focus, 2024 (in prep.)</i>
Enhanced Wet Grip with North American River Otter Paws <i>Annals of the New York Academy of Sciences</i>
Canine-inspired Unidirectional Flows for Improving Memory Effects in Machine Olfaction <i>Integrative and Comparative Biology, 2023</i>
Onggi's Permeability to Carbon Dioxide Accelerates Kimchi Fermentation <i>Royal Society Interface, 2023</i>

Grants & Fellowships

Departmental Topping Fellowship of Best Graduate Mentor <i>George W. Woodruff School of Mechanical Engineering</i>	2024
KSEA-KUSCO Graduate Scholarship <i>Korean-american Scientists and Engineers Association</i>	2023

Presidential Science Scholarship <i>Korea Student Aid Foundation</i>	2015–2020
Junior Fellowship <i>Institute of Japanese Studies, Seoul National University</i>	2016
KSA Scholarship <i>Korea Science Academy of KAIST</i>	2012–2014
Academic Scholarship <i>Busan Bank</i>	2012

Awards & Honors

Best Mentor Award <i>Nakatani Foundation of Research and International Researches for Students</i>	2024
Next-Generation Science and Technology Leader Net <i>Korean Federation of Science and Technology Societies (KOFST)</i>	2023
Cover Image of The Royal Society Interface Journal, Volume 20, Issue 202 <i>Onggi's Permeability to Carbon Dioxide Accelerates Kimchi Fermentation</i>	May 2023
Special Prize in Field Problem Solving <i>SNU X-corps Research Group</i>	2020
Certificate of Appreciation from Director-level US Delegations <i>National Geospatial-Intelligence Agency</i>	2019
Outstanding Materials and Manufacturing Processes Award <i>Seoul National University</i>	2019
Excellence Award in Mechanical Product Design Contest <i>Seoul National University</i>	2019

Courses Taken

Introduction to Fluid Mechanics, Computational Fluid Mechanics, Interfacial Fluid Mechanics
 Transport Phenomenon of Multiphase Flow, Intermediate Heat Transfer, Convection Heat Transfer
 Experimental Methods Air Quality, Turbulent Flow, Biotransport, Modeling and Simulation
 Mathematical Method and Applied Science, Numerical Linear Algebra
 Computational Science and Engineering Algorithms, Computational Data Analytics

Relevant Skills

Programming in C++, Python, Julia, MATLAB
 Extensive knowledge of ROS, PyTorch, Arduino, 3D-Printing, Solidworks, Siemens NX
 Extensive knowledge of COMSOL Multiphysics, OpenFoam, Ansys Fluent, HyperWorks, PowerFLOW
 Fluent level in English and Korean
 Basic level in German and Japanese